



DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

[Docket ID PHMSA-2012-0021]

Pipeline Safety: Public Comment on Leak and Valve Studies Mandated by the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT

ACTION: Notice of Public Comment

SUMMARY: The Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA) is providing an important opportunity through this notice for all stakeholders to publically comment on the scope of recently commissioned studies involving leak detection systems and valves. This action and others described within this notice will support the comprehensive investigation of topics and issues Congress has charged to PHMSA.

DATES: PHMSA must have all comments submitted by close of business **[INSERT DATE 30 DAYS FROM THE DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Comments should reference Docket No. PHMSA-2012-0021 and may be submitted in the following ways:

- E-Gov Web Site: <http://www.Regulations.gov>. This site allows the public to enter comments on any Federal Register notice issued by any agency.
- Fax: 1-202-493-2251.

- Mail: DOT Docket Management System: U.S. DOT, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, S.E., Washington, DC 20590-0001.
- Hand Delivery: U.S. DOT Docket Management System; West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, S.E., Washington, DC 20590-0001 between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays.

Instructions: You should identify the Docket No. PHMSA-2012-0021 at the beginning of your comments. If you submit your comments by mail, submit two copies. To receive confirmation that PHMSA received your comments, include a self-addressed stamped postcard. Internet users may submit comments at <http://www.regulations.gov>.

Note: Comments are posted without changes or edits to <http://www.regulations.gov>, including any personal information provided. There is a privacy statement published on <http://www.regulations.gov>.

Any technically substantive comments received after the comment closing date will be considered to the extent practicable.

FOR FURTHER INFORMATION CONTACT: Contact Max Kieba at 202-493-0595 or Email: max.kieba@dot.gov for questions regarding the leak detection study. Contact Patrick Landon at 202-695-0798 or Email: patrick.landon@dot.gov for questions regarding the valve study.

BACKGROUND: The recent passage of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 has called for several commissioned studies and reports to Congress that PHMSA must address and complete. Further, PHMSA is also evaluating how to address several concerns raised by recent National Transportation Safety Board recommendations.

PHMSA has commissioned two studies to gather facts and perform technical, operational, and economical analyses about the constraints and implications for expanding the uses of leak detection systems and automatic and remote controlled valves. PHMSA believes that the scope of these studies should have a wide stakeholder review and input and seeks public input through two venues.

First is the public workshop on Improving Pipeline Leak Detection System Effectiveness and Understanding the Application of Automatic/Remote Control Valves on March 27-28, 2012. This workshop will examine how to encourage operators to expand usage of leak detection systems (LDS) and improve system effectiveness on the Nation's pipeline infrastructure and how remote control and automatic control valves can be installed to lessen the volume of natural gas and hazardous liquid released during catastrophic pipeline events. These public meetings are designed to provide an open forum for exchanging information on the challenges associated with LDS and automatic/remote control valves.

Second is the opportunity for all stakeholders to publically comment on the scope of these two studies. This notice was designed to do just that. The following sections identify what Congress has mandated in these studies and the scope of work PHMSA has factored into each study.

Leak Detection Study

The Congress included the following language from the Act related to the leak detection study:

“SEC. 8. LEAK DETECTION.

(a) LEAK DETECTION REPORT.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary of Transportation shall submit to the Committee on Commerce, Science, and Transportation of the

Senate and the Committee on Transportation and Infrastructure and the Committee on Energy and Commerce of the House of Representatives a report on leak detection systems utilized by operators of hazardous liquid pipeline facilities and transportation-related flow lines.

(2) CONTENTS.—The report shall include—

(A) an analysis of the technical limitations of current leak detection systems, including the ability of the systems to detect ruptures and small leaks that are ongoing or intermittent, and what can be done to foster development of better technologies; and

(B) an analysis of the practicability of establishing technically, operationally, and economically feasible standards for the capability of such systems to detect leaks, and the safety benefits and adverse consequences of requiring operators to use leak detection systems.”

PHMSA has commissioned a leak detection study containing the following work scope:

Task 1 – Kickoff Meeting

A kickoff meeting will be held via webinar or phone call to review the scope of the project.

Task 2 – Attendance at Public Workshop

The contractor will attend PHMSA’s *Improving Pipeline Leak Detection System Effectiveness Public Workshop* on March 27, 2012. Any public input from that workshop will be considered for any potential modifications of the scope of work and when developing the final report.

Task 3 – Review and assess previous pipeline incidents

PHMSA will provide access to its pipeline incident data. The contractor will examine past pipeline incidents and consider any non-PHMSA datasets that may provide useful insight and analysis to meet project objectives. This evaluation will help determine whether implementation

of further leak detection capabilities would have mitigated effects to the public and surrounding environment. The contractor will use standard fire science practices to perform the risk analysis to property, public, and the environment. This evaluation will also help determine the level of protection needed for adequate mitigation.

Task 4 – Technological Feasibility

The contractor will compare all methods to determine whether current systems (or multiple systems) are able to adequately protect the public and the environment from pipeline leaks or incidents. The contractor is to look at legacy equipment currently utilized by operators, their ability to retrofit, and all benefits and drawbacks of all methods. The contractor is to consider the method/systems ability to detect small/intermittent leaks and identify and explain any technology gaps.

Task 5 – Operational Feasibility

The contractor will analyze leak detection methods and systems that are currently being used throughout the industry. This task includes defining and categorizing leak detection methods and systems that range from visual inspection techniques, instrumented monitoring of internal pipeline conditions, and external instrumentation for detecting leaked hydrocarbons. This task includes a view of how many operators are adequately protecting their infrastructure with leak detection systems, and an analysis of operational aspects (i.e. procedures, protocols, best practices, workforce, etc.). The contractor will consider reliability, availability and maintainability of system aspects and analyze how further leak detection methods/system deployment would affect pipeline operations.

Task 6 – Economical Feasibility

The contractor will perform a cost benefit analysis for deploying leak detection systems on new and existing pipeline systems. The cost benefit will determine the lifetime operational cost of the system and take into account the benefit that may be seen by the public and surrounding environment over the anticipated life cycle of the individual leak detection systems. The analysis will focus on the entire pipeline infrastructure with a separate analysis to include pipelines in high consequence areas (HCAs) only. Damage to surrounding environment/public must utilize standard fire science practices.

Task 7– Analyze leak detection standards

The contractor is to analyze the practicability of establishing technically, operationally, and economically feasible leak detection standards to provide adequate protection to the Nation against pipeline leaks, if such standards don't already exist. The analysis should be specific to the type of pipeline (gas distribution, gas transmission, hazardous liquid pipeline facilities, transportation-related flow lines, etc.) and consider pipeline locations (i.e., Class Locations, HCAs, non-HCAs, etc.).

The deliverable from this study will embody the supporting information reported to Congress starting in December 2012, and will be publically available from PHMSA's website at <http://www.phmsa.dot.gov/pipeline/library> .

Automatic and Remote Controlled Shut-Off Valves

Congress included the following language from the Act related to the valve study:

“SEC. 4. AUTOMATIC AND REMOTE-CONTROLLED SHUT-OFF VALVES.

Section 60102 is amended—

(1) by striking subsection (j)(3); and

(2) by adding at the end the following:

(n) Automatic And Remote -Controlled Shut-OFF Valves For New Transmission Pipelines.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of this subsection, and after considering the factors specified in subsection (b)(2), the Secretary, if appropriate, shall require by regulation the use of automatic or remote-controlled shut-off valves, or equivalent technology, where economically, technically, and operationally feasible on transmission pipeline facilities constructed or entirely replaced after the date on which the Secretary issues the final rule containing such requirement.

(2) HIGH-CONSEQUENCE AREA STUDY.—

(A) STUDY.—The Comptroller General of the United States shall conduct a study on the ability of transmission pipeline facility operators to respond to a hazardous liquid or gas release from a pipeline segment located in a high-consequence area.

(B) CONSIDERATIONS.—In conducting the study, the Comptroller General shall consider the swiftness of leak detection and pipeline shutdown capabilities, the location of the nearest response personnel, and the costs, risks, and benefits of installing automatic and remote-controlled shut-off valves.

(C) REPORT.—Not later than 1 year after the date of enactment of this subsection, the Comptroller General shall submit to the Committee on Transportation and Infrastructure and the

Committee on Energy and Commerce of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the study.”

PHMSA has commissioned a study on the requirements of automatic and remote controlled shut-off valves that cover natural gas and hazardous liquid lines containing the following work scope:

Task 1: Kickoff Meeting

A kickoff meeting will be held via webinar or phone call to review the scope of the project.

Task 2: Attend Public Workshop

The contractor will attend PHMSA’s *Understanding the Application of Automatic Control and Remote Control Valves* public workshop on March 28, 2012. The contractor will review and provide feedback on any result from the workshop. The feedback should be incorporated into the tasked studies. This can potentially lead to a modification of scope and costs if warranted

Task 3: Required Study on Automatic and Remote Controlled Shut-off Valves on HCAs and Class 3 and Class 4 Areas on Natural Gas Pipelines

The contractor will conduct a study on the ability of transmission pipeline facility operators to respond to a hazardous liquid or gas release from a pipeline segment located in a HCA. This study will evaluate Class 3 and Class 4 areas of natural gas transmission pipelines.

The contractor must analyze the technical and operational ability of the swiftness of the existing leak detection system and the operator’s capability to shut down the affected pipeline, and consider upstream and downstream controls, automation, supervisory control and data acquisition systems, and valve spacing. Also to be discussed are human factors of response, specifically, what is the minimum response time and the nearest required human to initiate isolation of the pipeline?

The contractor must perform a cost benefit analysis for installing automatic and remote controlled shut-off valves in HCAs and for gas transmission Class 3 and Class 4 areas. The cost benefit must determine the lifetime operational cost of the system and take into account the benefit that may be seen by the public and surrounding environment. Analysis should include the economic impact of damage to surrounding environment/public and utilize standard fire science practices to derive the result.

The contractor will perform a risk analysis of installing automatic and remote controlled shut-off valves as compared to local manual operation of isolation valves on transmission pipelines. The contractor will use standard fire science practices to perform the risk analysis that will analyze the risk to property, the public, and the environment.

The contractor is to analyze and discuss the benefits to the public and the environment of a requirement to install automatic and remote controlled shut-off valves within HCAs and Class 3 and Class 4 areas.

Task 4: Required Study on Automatic and Remote Controlled Shut-off Valves on Newly Constructed or Entirely Replaced Facilities.

The contractor is to study the use of automatic or remote controlled shut-off valves in newly-constructed and entirely replaced facilities constructed after January 2012. This study should address the economical, technical and operational feasibility of this requirement. The following points should be incorporated into the study.

Economic Feasibility

The contractor will perform a cost benefit analysis for installing automatic and remote controlled shut-off valves on new and entirely replaced pipeline systems. This cost benefit will determine the lifetime operational cost of the system and take into account the benefit that may be seen by the public and surrounding environment over the anticipated life cycle of automatic and remote controlled shut-off valves installed. Analysis should include the economic impact of damage to the surrounding environment/public and utilize standard fire science practices to derive the result.

Technical Feasibility

The contractor is to compare all types of automatic and remote controlled shut-off valves and determine whether available technologies can adequately protect the public and environment from pipeline leaks and incidents through rapid closure, and discuss benefits and drawbacks of all methods. Giving special consideration to the method/systems ability to detect and react to small/intermittent leaks, the contractor is to identify and explain any technology gaps and analyze any technological shortfalls specific to automatic shut-off valves' reliability. Modeling of rapid closure of valves will utilize standard fire science practices to establish benchmarks for technical feasibility. The contractor is also to determine if there are alternative technologies to automatic and remote controlled shut-off valves and investigate and explain these technologies.

Operational Feasibility

The contractor will review and summarize DOT's current regulations addressing the installation of automatic and remote controlled shut-off valves. This review will be for hazardous liquid and natural gas pipelines and determine how operators are currently complying with them. The contractor will analyze operational aspects (i.e. procedures, protocols, best practices, workforce,

etc.) and discuss reliability, availability and maintainability of these systems. The contractor will analyze how automatic and remote controlled shut-off valve installation would affect pipeline operations. Also, the contractor will consider how emergency first responders should be addressed in the operational feasibility study.

Task 5 – Review and assess previous pipeline incidents

PHMSA will provide access to pipeline incident data. The contractor will examine past pipeline incidents to determine whether installation of either automatic or remote controlled shut-off valves would have mitigated effects to the public and surrounding environment. The contractor will use standard fire science practices to perform the risk analysis to property, the public, and the environment.

The deliverable from this study will embody the supporting information reported to Congress starting in December 2012, and will be publically available on PHMSA's website at <http://www.phmsa.dot.gov/pipeline/library>.

Any individual or organization can submit comments on any of these commissioned studies.

However, there are time constraints to reporting to Congress. In order to meet the time constraints, PHMSA must have all comments submitted by close of business **[INSERT DATE 30 DAYS FROM THE DATE OF PUBLICATION IN THE FEDERAL REGISTER.]**

Some key questions for your consideration are:

Is PHMSA's commissioned work scope adequate for supporting a comprehensive report to Congress?

If not, what additional or revised work scope actions should PHMSA consider?

Is there a related technical report publically available that these studies should review?

Issued in Washington, DC on _March 26, 2012.

Linda Daugherty,

Deputy Associate Administrator for Policy and Programs.

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